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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/529,396

05/11/2005

Matthias Schulist

4114-15

6718

23117 7590 09/29/2008  
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EXAMINER

THIER, MICHAEL

ART UNIT

PAPER NUMBER

2617

MAIL DATE

DELIVERY MODE

09/29/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/529,396	<b>Applicant(s)</b> SCHULIST, MATTHIAS	
	<b>Examiner</b> MICHAEL T. THIER	<b>Art Unit</b> 2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 18 July 2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-14 and 16-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-14 and 16-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                       | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>7/22/2008</u> .   | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### *Response to Arguments*

1. Applicant's arguments filed 7/18/2008 have been fully considered but they are not persuasive.

**Applicant argues that "...Komatsu teaches using a code, which the examiner maps to Komatsu's pilot symbols, to obtain channel estimation values. But in contrast to what is claimed, those channel estimates are not then used to compensate the code itself, i.e. the pilot symbols themselves are not compensated...further arguing that in Komatsu each channel estimation value is obtained at a first symbol instant (pilot symbol) and used to correct another symbol (information symbol) at another symbol instant.**

In response to applicant's argument, the examiner respectfully disagrees. In column 3 lines 19-27 Komatsu teaches that a channel estimate is determined for the m-th information symbol in the n-th slot (lines 19-21). He goes on to explain that the compensation unit compensates the fluctuation of the m-th information symbol in the n-th slot, on the basis of the transmission channel estimation values obtained (i.e. determining a compensation value based on the channel estimate). Therefore, it is clear that the channel estimate is determined for a code symbol at a particular symbol instant and then the code symbol is then compensated based on the channel estimate. (i.e. channel estimate of the m-th information symbol in the n-th slot is taken, and then the m-th information symbol in the n-th slot is compensated on the basis of the channel estimate)

**Applicant further argues that Komatsu does not teach that each code symbol is compensated using the compensation value determined for the corresponding symbol instant, and the compensation value is determined based on the channel estimate which has been determined for the code symbol at the particular instant.**

In response to applicant's argument, the examiner respectfully disagrees. As explained above, in column 3 lines 19-27 Komatsu clearly teaches this limitation.

**Applicant further argues that, "...Komatsu does not describe that the purpose of the compensation is to restore an original power relationship among code symbols."**

In response to applicant's argument, the examiner respectfully disagrees. In column 4 lines 44-49 Komatsu teaches compensating for amplitude variations due to the TPC (transmission power control).

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claim 14 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one

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skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claim 14 recites a "computer readable medium", and as defined in the specification to be a "data carrier". The examiner is unsure of what type of data carrier the applicant is referring to. It is also noted that transmission data carriers (i.e. such as signals) are non statutory subject matter.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1, 4-5, 7, 10 and 14-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Komatsu (US 6876694) in view of Isaksson et al. (US 6493395).

**Regarding claims 1 and 14-16.** A method and receiver for evaluating a code which is orthogonal to one or more further codes (title and abstract), comprising the steps of:

receiving a signal which carries a code containing a sequence of code symbols;  
(column 3 lines 10-12 and column 4 lines 37-39)

determining for a code symbol at a particular symbol instant at least one channel estimate; (column 3 lines 19-22)

determining for the code symbol a compensation value taking into account the at least one channel estimate; (column 3 lines 23-27)

restoring a previous power relationship among the individual code symbols contained in the code by compensating each code symbol using the compensation value determined for the corresponding symbol instant; (column 3 lines 23-27, column 4 lines 44-49).

evaluating the code on the basis of the sequence of compensated code symbols (column 4 lines 1-13)

However, Komatsu does not specifically disclose the idea of evaluating the code on the basis of the sequence of compensated code symbols exploiting the orthogonality to the further codes.

Isaksson teaches a system using orthogonal carriers (abstract). He teaches the idea of evaluating the code on the basis of the sequence of compensated code symbols exploiting the orthogonality to the further codes in column 2 lines 28-32. The idea of having orthogonality between carriers and codes is a well known idea to avoid interference (i.e. as explained by Isaksson to avoid influence of neighboring carriers.)

Therefore it would have been obvious for one of ordinary skill in the art at the time of invention to utilize the teachings of Isaksson with the teachings of Komatsu. The motivation for doing so would have been to allow for avoiding, or minimizing interference (Isaksson column 2 lines 30-32).

**Regarding claim 4.** Komatsu further teaches wherein the signal carrying the code is received via multiple propagation paths, wherein for the particular symbol instant individual channel estimates for at least two propagation paths are determined and wherein the compensation value for the particular symbol instant is determined

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taking into account the individual channel estimates determined for this symbol instant.  
(column 3 lines 10-12 and 19-22, and column 4 lines 43-48)

**Regarding claim 5.** Komatsu further teaches wherein in the compensation value weak propagation paths are considered with a lower significance than strong propagation paths. (column 4 lines 45-48)

**Regarding claim 7.** The idea wherein the code is used in an access signaling context to identify or address a particular network component requesting access to a network resource is an obvious and well known technique in the art of wireless communications. The idea of identifying the network component requesting access by a code within the signal is obvious and the examiner thus takes official notice.

**Regarding claim 10.** Komatsu further teaches wherein the step of determining channel estimates comprises averaging for a specific propagation path each channel estimate over a number of symbol instants. (column 3 lines 10-12)

**Regarding claim 17.** Komatsu further teaches wherein the receiver is configured as a RAKE receiver. (figure 1 item 11)

**Regarding claim 18.** Komatsu further teaches wherein the compensator is configured to generate a maximum ratio combined output signal.(column 3 lines 1-4, i.e. the apparatus estimates and compensates more accurately (i.e. thus maximum ratio) the transmission channel (or output signal))

6. Claims 2-3 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over the grounds of rejection as applied to claim 1 above, and further in view of Salehi

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et al. (US 2003/0137956)

**Regarding claim 2.** Komatsu and Isaksson teach the limitations of the previous claim.

However, they do not specifically disclose wherein the step of evaluating the code comprises determining if the received code is identical with a known code and/or which code out of a predefined set of orthogonal codes has been received.

Salehi teaches a method and system for evaluating codes in par. 10. He teaches that the idea of comparing the received code to known codes in par. 10.

Therefore it would have been obvious for one of ordinary skill in the art at the time of invention to utilize the teachings of Salehi with the teachings as in the combination of Isaksson and Komatsu. The motivation for doing so would have been to allow for synchronizing the transmitter and receiver (Salehi par. 3)

**Regarding claim 3.** Salehi further teaches wherein the step of evaluating the code comprises associating the sequence of compensated code symbols with one or more known sequences of code symbols. (par. 10)

**Regarding claim 12.** Salehi further teaches wherein the step of evaluating the code comprises a comparison with a threshold. (par. 10)

7. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over the grounds of rejection as applied to claim 1 above, and further in view of Sung (US 7035315).

**Regarding claim 11.** Komatsu and Isaksson teach the limitations of the



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previous claim.

However, they do not specifically disclose wherein the step of determining channel estimates comprises a Doppler shift adaptation of the channel estimates.

Sung teaches this idea in column 3 lines 30-34.

Therefore it would have been obvious for one of ordinary skill in the art at the time of invention to utilize the teachings of Sung with the teachings as in the combination of Isaksson and Komatsu. The motivation for doing so would have been to allow for removing the Doppler frequency shift in an optimum and realizable manner. (Sung column 1 lines 47-49)

#### ***Allowable Subject Matter***

8. Claims 6, 8, 9, and 13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

#### ***Conclusion***

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

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extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHAEL T. THIER whose telephone number is (571) 272-2832. The examiner can normally be reached on Monday thru Friday 7:30-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duc Nguyen can be reached on (571) 272-7503. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/M. T. T./  
Examiner, Art Unit 2617  
9/16/2008

/Duc Nguyen/  
Supervisory Patent Examiner, Art Unit 2617